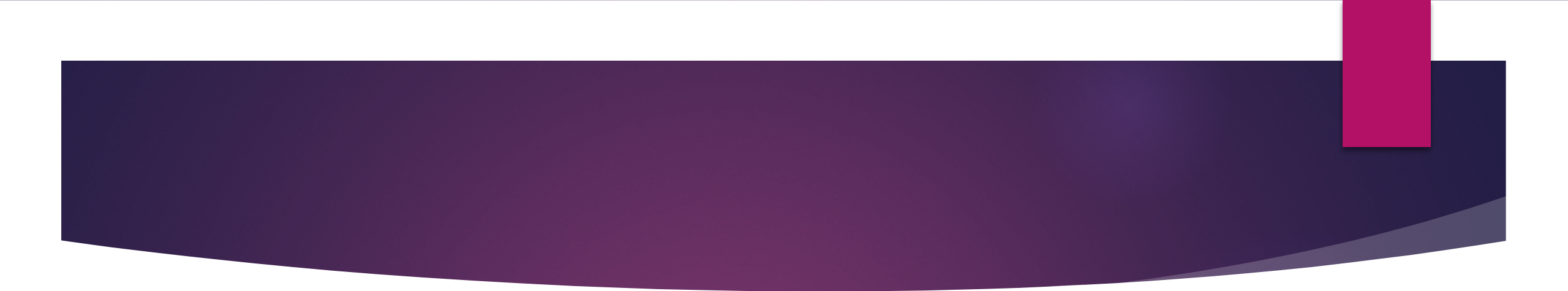




# MCQ clickre Q

[HTTPS://WWW.YOUTUBE.COM/WATCH?V=DFPEPRQ7OGC](https://www.youtube.com/watch?v=DFPEPRQ7OGC)

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- ▶ An electron and a proton both moving at nonrelativistic speeds have the same de Broglie wavelength. Which of the following are also the same for the two particles?
    - A. The speed is the same for both particles.
    - B. The kinetic energy is the same for both particles.
    - C. The momentum is the same for both particles.
    - D. The frequency is the same for both particles.
    - E. All of the above statements are correct.

► A proton has four times the momentum of an electron. If the electron has a de Broglie wavelength  $\lambda_e$ , what is the de Broglie wavelength of the proton?

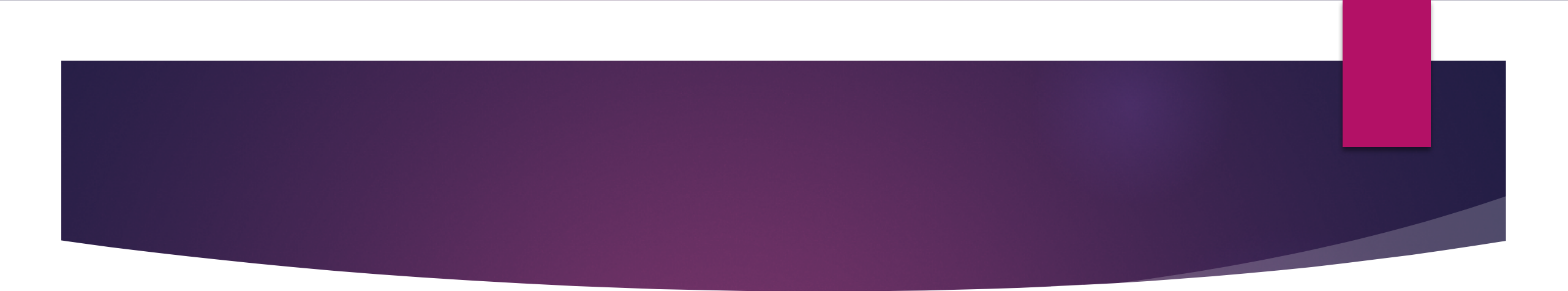
A.  $\lambda_e$

B.  $\lambda_e / 4$

C.  $4 \lambda_e$

D.  $\lambda_e / 16$

E.  $16 \lambda_e$

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- ▶ **Of the following, which is the best evidence for the wave nature of *matter*?**
  - A. The interference pattern obtained when photons pass through a single slit system.
  - B. The interference pattern obtained when electrons pass through a two-slit system.
  - C. The photoelectric effect.
  - D. Compton scattering.
  - E. e. Blackbody radiation.